

# Aero Design Ltd.

## Work Order Control Sheet

Work Order#: 2015-139 Date Opened: 30-Dec-15 Title: Assembly  
Aircraft OEM: Bell Aircraft Model: 212 Product Type: Rappel Bar Product Model: N/A Quantity: 1

### Work Order Contents

Work Order/Build Sheets (Procedures Provided)  
Additional Work Sheets (Standard Practice)  
Drawings (See List Below)  
Parts Distribution Sheet  
Sub Component Tags  
Completed Certification (Original)  
Time Sheet (R&D)  
Notes

Initial or N/A

N/A
N/A
JC
JC
JC
JC
N/A
N/A

### Build Sheet Contents

Tasks Initialled  
Dual Inspections Initialled

Initial or N/A

N/A
N/A

### Drawing List

Drawing #	Rev #	Description	Initial or N/A
75801	2	Rappel Mount Install'n	JC
75820	2	Rappel Mount Ass'y	JC

### Traveller

Initial or N/A


### Component Completion

Quantity Complete on This Work Order  
Quantity Incomplete on This Work Order  
Further Processing Required Before Release  
Release to Stock as Components

As Instructed

1
0
N/A
N/A

### Certification

Form One Completed  
Serviceable (Green) Tag Completed  
In Process (Yellow) Tag Completed  
Unserviceable (Red) Tag Completed  
Parts Placed in Stores for Distribution

Initial or N/A

JC
N/A
N/A
N/A
N/A

### Additional Documentation

Documentation of a minor change  
Non-Conformance Report Required  
Service Difficulty Report Required

Initial or N/A

N/A
N/A
N/A

### Billing

Local (Aero Design)  
Research and Development  
Third Party

Initial or N/A

JC
N/A
N/A

Work performed by:

Print: J. Clarke

Sign: 

SCA: AD02

Date: 24-Jun-16

ICC / Dual Inspection performed by:

Print: J. Rekve

Sign: 

SCA: AD01

Date: 24-Jun-16

Work Order closed by:

Print: J. Clarke

Sign: 

SCA: AD02

Date: 24-Jun-16

Approved Manufacturing Facility 73-04

Form 20.D.03

Rev. Original 23 Sep 2014

**Aero Design Ltd.****Work Order Control Sheet**

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Time Sheet (R&D)  
Notes

Initial or N/A

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N/A
JC
JC
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N/A
N/A

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Dual Inspections Initialled

Initial or N/A

N/A
N/A

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Initial or N/A


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In Process (Yellow) Tag Completed  
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Initial or N/A

JC
N/A
N/A
N/A
N/A

**Additional Documentation**

Documentation of a minor change  
Non-Conformance Report Required  
Service Difficulty Report Required

Initial or N/A

N/A
N/A
N/A

**Billing**

Local (Aero Design)  
Research and Development  
Third Party

Initial or N/A

JC
N/A
N/A

Work performed by:

Print: J. ClarkeSign: [Signature]SCA: AD02Date: 24-Jun-16

ICC / Dual Inspection performed by:

Print: J. RekveSign: [Signature]SCA: AD01Date: 24-Jun-16

Work Order closed by:

Print: J. ClarkeSign: [Signature]SCA: AD02Date: 24-Jun-16

Approved Manufacturing Facility 73-04

Form 20.D.03

Rev. Original 23 Sep 2014



## **Aero Design Ltd.**

9888 A Malaspina Rd., Powell River, BC  
V8A 0G3, 604-483-AERO (2376)

Quantity: 1

PN: 75830-01

Alt: N/A

Aircraft: Bell

Model:

205/212/412

Description: Tube

Supplier: Aero Design Ltd.

Color: Chrome

WO#: 2012-06

PO#: N/A



## Aero Design Ltd.

9888 A Malaspina Rd., Powell River, BC  
V8A 0G3, 604-483-AERO (2376)

Quantity: 1

PN: 75822-01

Aircraft: All

Model: All

Description: Ring Half

Supplier: Aero Design Ltd.

Color: N/A

WO#: 2015-83

PO# N/A



## Aero Design Ltd.

9888 A Malaspina Rd., Powell River, BC  
V8A 0G3, 604-483-AERO (2376)

Quantity: 1  
PN: 75822-01  
Aircraft: All  
Description: Ring Half  
Supplier: Aero Design Ltd.  
Color: N/A  
WO#: 2015-83

Model: All

PO# N/A



## **Aero Design Ltd.**

9888 A Malaspina Rd., Powell River, BC  
V8A 0G3, 604-483-AERO (2376)

Quantity: 1

PN: 75820-01

Aircraft: Bell

Model:

205/212/412/214

Description: Rappel Mount Assembly

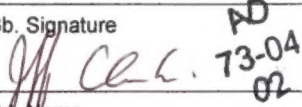
Supplier: Aero Design

Color: N/A

WO#: 2015-139

PO# N/A



1. Approving Civil Aviation Authority/Country <b>Transport Canada</b>		2. AUTHORIZED RELEASE CERTIFICATE FORM ONE			3. Form Tracking No. <b>2016-0089</b>	
4. Organization Name and Address <b>Aero Design Ltd. – 9888A Malaspina Road, Powell River, BC, V8A 0G3</b>					5. Work Order/Contract/Invoice <b>WO 2015-139</b>	
6. Item	7. Description <b>Rappel Bar Ass'y</b>	8. Part Number <b>75820-01</b>	9. Qty. <b>1</b>	10. Serial/Batch No. <b>N/A</b>	11. Status/Work <b>New</b>	
12. Remarks <b>Left Hand</b>						
13a. Certifies that the items identified above were manufactured in conformity to:  <input checked="" type="checkbox"/> Approved design data and are in condition for safe operation. <input type="checkbox"/> Non approved design data specified in block 12.			<del>14a. <input type="checkbox"/> CAR 571.10 Maintenance Release</del> <del><input type="checkbox"/> Other regulation specified in block 12.</del> <del>Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12, has been performed in compliance with the Canadian Aviation Regulations.</del>			
13b. Signature  <b>AD 73-04 02</b>		13c. Approved Organization Number <b>AMF 73-04</b>		14b. Signature		14c. Approved Organization Number
13d. Name <b>Jeff Clarke - AD02</b>		13e. Date (dd/mmm/yyyy) <b>24 June 2016</b>		14d. Name		14e. Date (dd/mmm/yyyy)
<p align="center"><b>Installer Responsibilities</b></p> <p>This certificate does not constitute authority to install.</p> <p>Installers working in accordance with the national regulations of a country other than that specified in block 1 must ensure that their regulations recognize certifications from the country specified.</p> <p>Statements in blocks 13a or 14a do not constitute installation certification. In all cases, the technical record for the aircraft must contain an installation certification issued in accordance with the applicable national regulations before the aircraft may be flown.</p>						

*Sikorski*

Description: RAPPEL BAR

WO# 2015-139

[illegible]



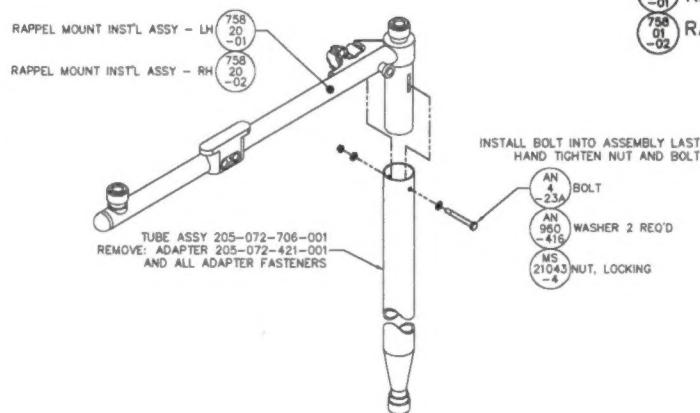
2015-139

## WEIGHT AND BALANCE

ITEM DESCRIPTION	LONGITUDINAL			LATERAL		
	WEIGHT (LB)	ARM (IN)	MOMENT (LB-IN)	ARM (IN)	MOMENT (LB-IN)	
75801						
-01 RAPPEL MOUNT PROVISION - LHS	7.63	120.4	918.6	-39.5	-301.4	
-02 RAPPEL MOUNT PROVISION - RHS	7.63	120.4	918.6	39.5	301.4	

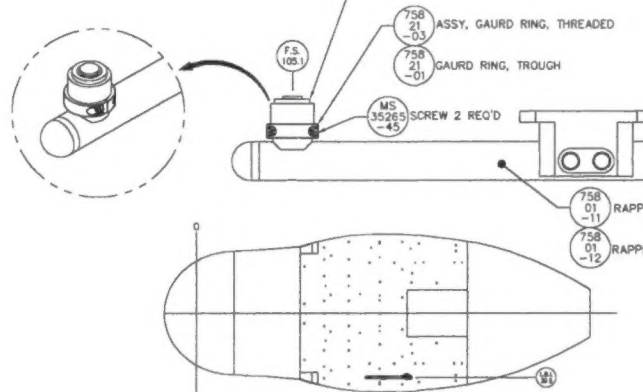
## GENERAL INSTALLATION NOTES:

1. INSTALL 75837-01 (PLACARD) AND 75837-02 (PLACARD) IN CLEAR VIEW OF THE PILOT.
2. THE HOOK KNIFE MUST BE CARRIED BY THE RAPPEL OPERATIONS LOAD MASTER FOR IMMEDIATE ACCESS OR FIXED WITHIN THE HELICOPTER CABIN READILY ACCESSIBLE TO THE RAPPEL OPERATIONS LOAD MASTER. THE LOCATION DETAILS OF THE HOOK KNIFE MUST BE DETAILED BY THE OPERATING AGENCY'S OPERATING PROCEDURES.



758 01 -11 RAPPEL MOUNT INSTALLATION ASSEMBLY LH  
SHOWN - NOT TO SCALE  
758 01 -12 RAPPEL MOUNT INSTALLATION ASSEMBLY RH  
OPPOSITE

ADJUST POSITION OF CLAW ADAPTER TO MATCH AIRCRAFT. TIGHTEN TO 160-190 IN\*LB.  
SECURE THE CLAW ADAPTER (33115) TO THE ROOF STUD AT F.S. 105.1, B.L. 39.5. INSTALL GUARD RINGS AFTER THE CLAW ADAPTER IS SECURE.

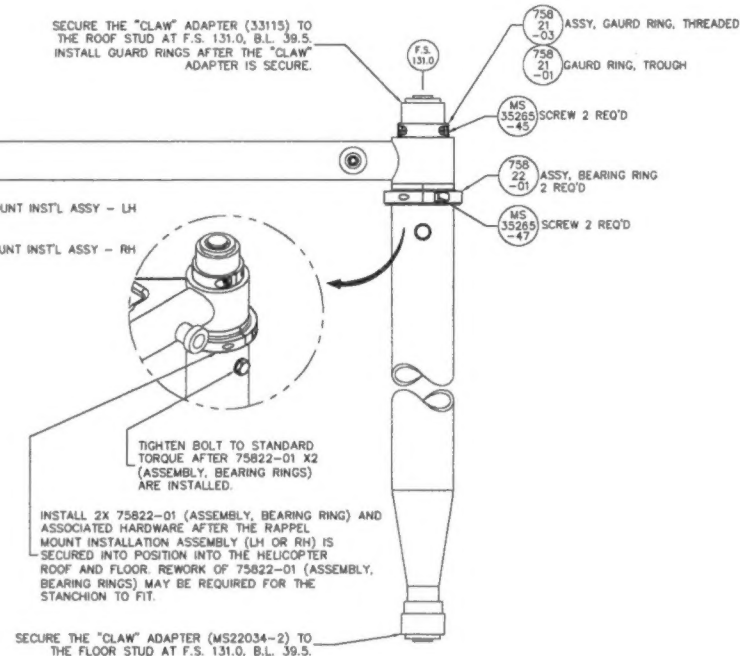


758 01 -01 RAPPEL MOUNT PROVISION INST. LHS  
SHOWN - NOT TO SCALE  
758 01 -02 RAPPEL MOUNT PROVISION INST. RHS  
OPPOSITE

TORQUE VALUE CHART (DRY) FOR ALL FASTENERS		
FASTENER DIAMETER/THREAD SIZE	RECOMMENDED STANDARD TORQUE RANGE	
10 - 32	20 TO 25 IN*LB	
1/4 - 28	50 TO 70 IN*LB	

NOTE: THE ABOVE VALUES APPLY TO ANY FASTENER COMBINATION UNLESS OTHERWISE SPECIFIED. TARE TORQUE MUST BE ADDED TO ALL TORQUE VALUES.

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REV	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE		
1	VARIOUS CHANGES	RR	30/12/08
2	FWD CLAW FITTING ADJUSTABLE	RR	14/04/09
2A	FIX ALTERNATE SCREWS	BUC	23/03/12



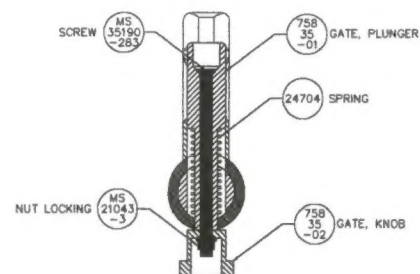
QTY	PART NO.	DESCRIPTION
1	205-070-706-001	TUBE ASSY (BELL HELICOPTERS)
1	MS31043-4	LOCKWIT
2	AN980-416	WASHER
1	AN4-23A	BOLT
1	75820-02	RAPPEL MOUNT ASSEMBLY - RH
1	75820-01	RAPPEL MOUNT ASSEMBLY - LH
1	75801-12	RAPPEL MOUNT INSTALLATION ASSEMBLY - RH
1	75801-11	RAPPEL MOUNT INSTALLATION ASSEMBLY - LH
2	75822-01	ASSEMBLY, BEARING RING
1	75837-01	HOOE KNIFE VENDOR: VANGUARD TECHNETICS, INC. (SAFETY KNIFE)
1	75837-02	PLACARD
1	75837-01	PLACARD
2	75821-03	ASSEMBLY, GAURD RING, THREADED
2	75821-01	GAURD RING, TROUGH
4	MS35265-45	SCREW ACCEPTABLE ALTERNATIVE: SOCKET HEAD CAP SCREW #8-32 X 0.5 LONG
2	MS35265-47	SCREW ACCEPTABLE ALTERNATIVE: SOCKET HEAD CAP SCREW #8-32 X 0.75 LONG
1	75801-02	RAPPEL MOUNT PROVISION INST. RHS
1	75801-01	RAPPEL MOUNT PROVISION INST. LHS
-12	-11	-02 -01 PART NO. DESCRIPTION

APPROVALS		DATE
DRAWN:	R. RATHWELL	29/12/08
CHECKED:	E. BURDON	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:		
DECIMALS ANGLES		
X.XXX ±0.010 ±1/2°		
X.XX ±0.03		
X.X ±0.1		
SCALE: NOTED		DWG. NO.
SHEET 1 OF 1		A1
REV.		DWG. NO.
2		75801
A		

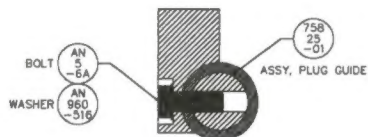
**AERO DESIGN LTD.**  
CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 5006  
9015 - 59TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6B7  
Tel: (403) 860-8087 Fax: (403) 860-8083 www.aerodesign.ca

BELL 212, 412, 205A-1, 205B  
RAPPEL MOUNT PROVISION  
INSTALLATION

2015-139



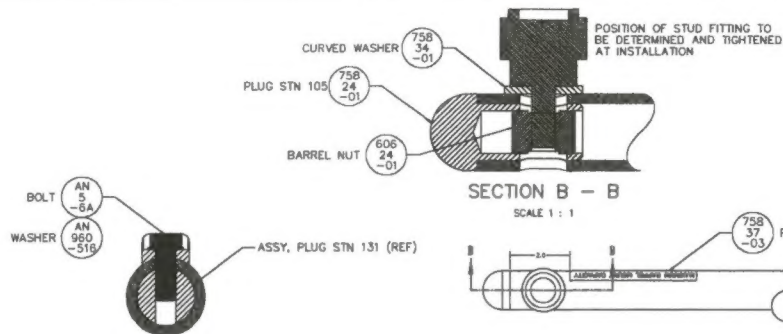
SECTION D - D  
SCALE 1 : 1



SECTION C - C  
SCALE 1 : 1  
TYPICAL 2 PLACES

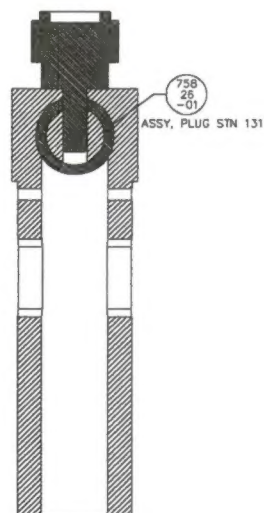
TORQUE VALUE CHART (DRY) FOR ALL FASTENERS	
FASTENER DIAMETER/THREAD SIZE	RECOMMENDED STANDARD TORQUE RANGE
10 - 32	20 TO 25 IN-LB
1/4 - 28	50 TO 70 IN-LB
5/16 - 24	100 TO 140 IN-LB
3/8 - 24	180 TO 190 IN-LB

NOTE: THE ABOVE VALUES APPLY TO ANY FASTENER COMBINATION UNLESS OTHERWISE SPECIFIED. TAKE TORQUE MUST BE ADDED TO ALL TORQUE VALUES.

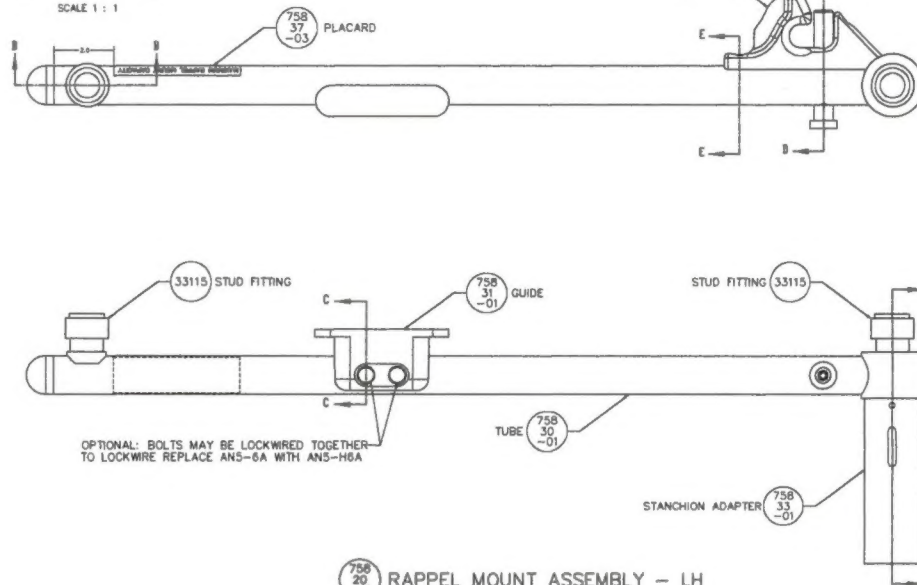


SECTION B - B  
SCALE 1 : 1

SECTION E - E  
SCALE 1 : 1  
TYPICAL 2 PLACES



SECTION A - A  
SCALE 1 : 1



758 20-01 RAPPEL MOUNT ASSEMBLY - LH  
SHOWN  
SCALE 1 : 2

758 20-02 RAPPEL MOUNT ASSEMBLY - RH  
OPPOSITE

1	1	75837-03	PLACARD		
1	1	MS35190-283	SCREW		
1	1	24704	# 0.5 X 0.041 X 1.5 SPRING	DYNALINE	
4	4	AN960-516	WASHER		
4	4	AN5-6A	BOLT		
2	2	33115	STUD FITTING	KINEDYNE	
1	1	60624-01	BARREL NUT		
1	1	75828-01	ASSEMBLY, PLUG STN 131		
1	1	75825-01	ASSEMBLY, PLUG GUIDE		
1	1	75824-01	PLUG STN 105		
1	1	75835-02	GATE KNOB		
1	1	75835-01	GATE PLUNGER		
1	1	75834-01	CURVED WASHER		
1	1	75833-01	STANCHION ADAPTER		
1	1	75832-01	RETAINER		
1	1	75831-01	GUIDE		
1	1	75830-01	TUBE		
1	1	75820-21	RAPPEL MOUNT ASSEMBLY - RH		
1	1	75820-01	RAPPEL MOUNT ASSEMBLY - LH		

QTY	PART NO.	DESCRIPTION	MATERIAL/VENDOR	MATERIAL SPEC	STOCK SIZE
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LIST OF MATERIALS					
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APPROVALS		DATE		AERO DESIGN LTD.	
DRAWN: R. RATHWELL		22/04/08		CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAB 200M	
CHECKED: E. BURGOIN				5015 - 50TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2B 0E7	
				tel: (403) 850-8087 fax: (403) 850-8593 www.aerodesign.ca	
UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		BELL 212, 412, 205A-1, 205B	
TOLERANCES ON:		ANGLES		RAPPEL MOUNT PROVISION	
DECIMALS		±0.010		RAPPEL MOUNT ASSEMBLY	
X.XX		±0.03		SCALE 1 : 2	
X.X		±0.1		DWG. SIZE	
				DWG. NO.	
				REV.	
				SHEET 1 OF 1	
				A1	
				75820	
				2	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE		
1	VARIOUS CHANGES	RR	30/12/08
2	ADJUSTABLE FORWARD END OF ASSEMBLY INCORPORATED	RR	14/04/09



2015-139

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE		

MAXIMUM RAPPEL MOUNT CAPACITY  
350 LB  
(158 KG)

③ PLACARD  
SCALE 1 : 1

RAPPEL OPERATIONS DURING  
VFR CONDITIONS ONLY

② PLACARD  
SCALE 1 : 1

PLACARD NOTES - TYP ALL PLACARDS

LINEWIDTH = 1/32"  
MIN. TEXT HEIGHT = 1/8"  
TEXT COLOUR = RED  
TEXT FONT = ARIAL  
BACKGROUND COLOUR = WHITE

AIRCRAFT MUST BE IN HOVER  
FOR RAPPEL OPERATIONS

① PLACARD  
SCALE 1 : 1

75837-03	03	PLACARD	3M SCOTCHCAL 7725-10 (0.09MM) VINYL
75837-02	02	PLACARD	3M SCOTCHCAL 7725-10 (0.09MM) VINYL
75837-01	01	PLACARD	3M SCOTCHCAL 7725-10 (0.09MM) VINYL
PART NO.	ITEM	DESCRIPTION	MATERIAL
LIST OF MATERIALS			
APPROVALS DRAWN: R. RATHWELL CHECKED: E. BURGOIN		DATE 30/12/08	<b>AERO DESIGN LTD.</b> CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2" X.XX ±0.03 X.X ±0.1		BELL 212, 412, 205A-1, 205B RAPPEL MOUNT PROVISION PLACARDS	
SCALE 1 : 1 SHEET 1 OF 1		DWG. SIZE A4	DWG. NO. 75837
		REV. 0	

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